cyclic antidepressants (TCA); 3,4-methylenedioxy-N-methylamphetamine (MDMA); propranolol; clonidine; or ziprasidone.

6. The method according to claim **5**, wherein said SSRI is citalopram, escitalopram, fluvoxamine, paroxetine, or sertraline and/or said SNRI is venlafaxine, desvenlafaxine, duloxetine, sibutramine, or milnacipran.

7. A method for inhibiting or preventing Aβ oligomerization, or for increasing activity or expression of dopamine- and cyclic AMP-regulated phosphoprotein of 32 kDa (DARPP-32) and/or facilitating serotonin release in neural tissue or a cell, said method comprising contacting a cell with an effective amount of cotinine, or a composition comprising cotinine, or a pharmaceutically acceptable salt thereof.

8. The method according to claim **7**, wherein said cell is a cortical cell.

9. A method for detecting, diagnosing, and monitoring a condition associated with the accumulation and/or aggregation of Aβ peptide in neural tissue, said method comprising administering detectably labeled cotinine, or an isomer or racemate thereof, to a person or animal

10. The method according to claim **9**, wherein said labeled cotinine is detected using radioimaging.

11. The method according to claim **9**, wherein the level or concentration and/or location in neural tissue of said labeled cotinine is determined and/or analyzed.

12. The method according to claim **9**, wherein said labeled cotinine is labeled with a radioisotope.

13. The method according to claim **12**, wherein said radioisotope is detectable by Position Emission Tomography (PET) and/or single photon emission computed tomography (SPECT).

14. The method according to claim **13**, wherein said radioisotope is carbon-11, nitrogen-13, oxygen-15, fluorine-18, bromine-76, iodine-121, technetium-99m, iodine-123, or indium-111.

15. The method according to claim **9**, wherein the condition is Parkinson's disease or Alzheimer's disease.

16. The method according to claim **9**, wherein said labeled cotinine is radiolabeled and administered at a dose of about 1 mCi per 70 kg of body weight to about 100 mCi per 70 kg of body weight.

17. The method according to claim **9**, wherein said labeled cotinine is administered in a physiologically acceptable carrier, buffer, or diluent.

18. A cotinine molecule, or an isomer or racemate thereof, or a pharmaceutically acceptable salt thereof, or a composition comprising said cotinine molecule, wherein said cotinine is labeled with a detectable label.

19. The cotinine molecule according to claim **18**, wherein said cotinine is radiolabeled.

20. The cotinine molecule according to claim **18**, wherein said cotinine is labeled with a radioisotope detectable by PET and/or SPECT.

21. The cotinine molecule according to claim **20**, wherein said radioisotope is carbon-11, nitrogen-13, oxygen-15, fluorine-18, bromine-76, iodine-121, technetium-99m, iodine-123, or indium-111.

22. The cotinine molecule according to claim **18**, wherein said composition comprises a pharmaceutically acceptable carrier, diluent, or adjuvant.

23. The cotinine molecule according to claim **18**, wherein said composition comprises one or more other drugs useful in treating a neurodegenerative condition, Down's syndrome, or a stress disorder.

24. The cotinine molecule according to claim **23**, wherein said one or more other drugs is donepezil (ARICEPT), galantamine (RAZADYNE), rivastigmine (EXELON), memantine (AKATINOL), rasagiline (AZILECT), selegiline (EL-DEPRYL), L-dopa (LEVODOPA, SINEMET, PARCOPA, STALEVO, MADOPAR), carbidopa (LODOSYN), benserazide, a selective serotonin reuptake inhibitor (S SRI), a serotonin-norepinephrine reuptake inhibitor (SNRI), a tricyclic antidepressant (TCA), 3,4-methylenedioxy-N-methylamphetamine (MDMA), propranolol, clonidine, or ziprasidone, or an isomer or analog thereof, or a pharmaceutically acceptable salt thereof.

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